

## CLAIMS

1. A wound dressing comprising a support sheet and a layer of a synthetic hydrogel material coated onto the support sheet, wherein an active enzyme is dispersed in the synthetic hydrogel material.
2. A wound dressing according to claim 1, wherein the support sheet comprises a polymer film or a woven, nonwoven or knitted fabric sheet.
- 10 3. A wound dressing according to any preceding claim, wherein the support sheet is adapted to block or restrict passage of liquid from a back surface of the sheet to a wound facing surface of the sheet.
4. A wound dressing according to any preceding claim, wherein the hydrogel layer has a dry basis weight of from 10 to 200g/m<sup>2</sup>.
- 15 5. A wound dressing according to claim 1 or 2, wherein the synthetic hydrogel material is cross-linked hydrophilic polymer of a hydrophilic monomer and optionally one or more comonomers, together with water and/or one or more organic plasticisers, and optionally together with less than about 10% of one or more additives selected from surfactants, polymers, pH regulators, bioactive compounds and mixtures thereof.
- 20 6. A wound dressing according to any preceding claim, wherein the hydrogel layer comprises a hydrogel material selected from gels formed from vinyl alcohols, vinyl esters, vinyl ethers and carboxy vinyl monomers, meth(acrylic) acid, acrylamide, N-vinyl pyrrolidone, acylamidopropane sulphonic acid, pluronic (block polyethylene glycol, block polypropylene glycol)polystyrene maleic acid, NN-dimethylacrylamide, diacetone acrylamide or acryloyl morpholine.
- 30 7. A wound dressing according to any preceding claim, wherein the hydrogel layer comprises a plasticiser.

8. A wound dressing according to any preceding claim, wherein the hydrogel layer is apertured in register with apertures in the support layer.
9. A wound dressing according to any preceding claim, wherein the enzyme is chemically bonded with the synthetic hydrogel material.
10. A wound dressing according to any preceding claim, wherein the enzyme is selected from the group consisting of:
  - (a) antimicrobial enzymes such as lysozyme;
  - 10 (b) oxidase enzymes such as lactate oxidase, glucose oxidase, hexose oxidase, cholesterol oxidase, galactose oxidase, pyranose oxidase, choline oxidase, pyruvate oxidase, oxalate oxidase, glycollate oxidase and D-aminoacid oxidases;
  - (c) catalase;
  - (d) peroxidase enzymes such as lactoperoxidase, horseradish peroxidase, iodide peroxidase, chloride peroxidase and myeloperoxidase;
  - (e) Matrix forming and degrading enzymes, including proteinases and proteases, for example Streptokinase, collagenase and streptodornase, bromelain, plasmin and trypsin, Urokinase, plasmin, brinolase, tissue plasminogen activator, Factor XIIIa, thrombin, Von Willibrand factor,
  - 20 (f) Metabolic enzymes: for example Hexokinase, Phosphoglucose isomerase, phosphofructokinase, Aldose, Triose, phosphate isomerase, glyceraldehydes 3-phosphate dehydrogenase, phosphoglycerate kinase, phosphoglycerol mutase, enolase, pyruvate kinase, Citrate synthase, Aconitase, Isocitrate lyase, malate synthase, malate dehydrogenase;
  - 25 (g) Lysyl oxidases; and mixtures thereof.
11. A wound dressing according to any preceding claim, further comprising an layer of wound-fluid absorbent material.
- 30 12. A wound dressing according to any preceding claim, wherein the dressing further comprises a substantially liquid-impermeable backing layer covering the hydrogel layer and the support sheet and the optional absorbent layer.

13. A wound dressing according to claim 8, wherein the backing layer extends beyond at least one edge of the hydrogel layer and support sheet to provide an adhesive-coated margin adjacent to said edge for adhering the dressing to a surface.

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14. A wound dressing according to any preceding claim, further comprising one or more protective cover sheets over the wound facing surface of the hydrogel layer and support sheet.

10 15. A wound dressing according to any preceding claim, wherein the dressing is sterile and packaged in a microorganism-impermeable container.

16. A method of making a wound dressing comprising the steps of:  
preparing a hydrogel premix comprising a synthetic hydrogel polymer  
15 precursor and an enzyme;  
applying a layer of the premix to a solid support; followed by  
polymerising the premix on the support to produce a layer of synthetic hydrogel  
material on the support, wherein an active enzyme is dispersed in the synthetic  
hydrogel material.

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17. A method according to claim 16, wherein the hydrogel premix is UV-curable  
and the step of polymerizing comprises curing the hydrogel with ultraviolet light.

18. A method according to claim 16, wherein the hydrogel premix comprises an  
25 isocyanate-capped prepolymer, and said step of polymerising comprises allowing  
said prepolymer to react with a chain extending compound.

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